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ABSTRACT

The purpose of thise resource guide is to assist the teacher in using art experiences to develop student awareness of the necessity of preventing further destruction of the nation's natural resources. Topics are grouped under 7 headings: (1) purpose of the guide; (2) facts and predictions concerning crises in man's environment; (3) creative expression; (4) design and composition; (5) concepts, ideas, and suggestions for titles of illustrations; (6) ACT in TIME for the elementary school; and (7) ACT in TIME for the secondary school. In addition, sources of films and filmstrips on conservation and natural resources are listed. A conservation education bibliography is also included. (TL)

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OFFICE OF THE STATE SUPERINTENDENT OF PUBLIC INSTRUCTION
RICHARD D. WELLS, Superintendent

RESOURCE GUIDE FOR ACT in TIME

Art and Conservation Teaching To Improve Man's Environment

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PURPOSE

The purpose of the ACT in TIME Resource Guide is to make the task of the teacher easier as he seeks through art experiences to develop in his students an awareness of the crisis in man's environment and a sense of commitment to do what they can to alleviate the situation. The Guide is not intended to be a complete course of study, but will give assistance to the teacher in preparing units in the ACT in TIME program.

It goes without saying that this purpose is to be accomplished within the framework of an art program which is based on sound art objectives. For this reason, we are setting out below the overall objectives as stated in the bulletin published in 1967 by the National Art Education Association, *The Essentials of a Quality Art Program* as well as the objectives of the ACT in TIME program.

The NAEA statement of Art objectives:

"Objectives: Art in the school is both a body of knowledge and a series of activities which the teacher organizes to provide experiences related to specific goals. The sequence and depth of these experiences are determined by the nature of the art discipline, the objectives desired, and by the interests, abilities and needs of children at different levels of growth. As a result of the art program, each pupil should demonstrate, to the extent that he can, his capacity to: (1) have intense involvement in and response to personal visual experiences; (2) perceive and understand visual relationships in the environment; (3) think, feel and act creatively with visual materials; (4) increase manipulative and organizational skills in art performance appropriate to his abilities; (5) acquire a knowledge of man's visual art heritage; (6) use art knowledge and skills in his personal and community life; (7) make intelligent visual judgments suited to his experience and maturity; and (8) understand the nature of art and the creative process."

Objectives of the ACT in TIME program:

1. Children become aware of the problems confronting the nation in its efforts to prevent further destruction and misuse of our natural resources and of the necessity to repair the damage which has been and is being done.
2. Children will discover through participating in the program that art can be used as a means of communicating one's feelings and beliefs to others, and will realize that the organization of art elements according to principles of good design will aid in the process of communication.
3. Children will become aware of the importance of expressing their own ideas and of approaching the same theme through an avenue differing from that used by others.
4. Children discover the avenues through which they can help in this program now:
   a. Avoid littering
   b. Help clean up litter (children can take over a block or the area around a school under the guidance of adults in order to collect rubbish as has been done in Indianapolis, for instance. Boy Scouts have worked with Kiwanians in cleaning up along the shore of Monroe Reservoir. Many other examples could be cited).
   c. Through participating in the ACT in TIME program, their work will be displayed and thus will help others to understand the importance of actively working to bring about improvement and the eventual solving of these problems.
   d. Through talking about the program and its importance at home, they may enlist the interest and concern of their parents.
5. As the interests of the pupils go beyond Indiana, their concern for the crises facing other parts of the nation and the world can be developed: i.e. the Everglades, the offshore oil problem, depletion of wild life in the entire nation, the preservation of Alaska's resources, etc.

FACTS AND PREDICTIONS CONCERNING CRISES IN MAN'S ENVIRONMENT

We are indebted to Mr. Tom Dustin, Executive Secretary, Izaak Walton League of Indiana for the following resumé of key issues in the environmental crisis.

(1) The Water Resources Council consists of representatives of the major federal resource agencies—the Department of the Interior, the Department of Agriculture, the U. S. Army Corps of Engineers, etc. The Council gives its attention to the economic and social implications of water resource projects and the methods by which projects are formulated.

(2) Implementation of the water quality standards adopted by Indiana and all other states under the Water Quality Act of 1965 is the keystone for assuring clean water for our nation. The Clean Water Restoration Act of 1966 is the major implementing legislation for this project. $600,000,000 of the one billion dollars authorized by the Act has been appropriated by the House of Representatives. The program provides 50% federal grants for sewage treatment when cities and states each provide 25%.

(3) Provisions of the Clean Air Act are being inaugurated with the establishment of Air Quality Control Regions. Hearings were held in the Chicago Region, which includes Lake and Porter Counties of Indiana, on July 21 and September 26, 1969. The Cincinnati Air Quality Region, which includes Dearborn County, Indiana, held its first hearing on October 28. The next region to have a hearing will probably be Indianapolis. Current hearings are concerned with sulphur dioxides and particulate materials which are major products of fossil fuel burning.

(4) Conservationists are continuing their efforts to implement fully the Indiana Dunes National Lakeshore which was authorized by Congress in October, 1966. This project has been partially funded but continues to be threatened.

(5) Implementation of the Indiana Nature Preserves Act of 1967 is urgently needed. A Division of Nature Preserves has been created, but no land acquisition funds have been provided. The Division has been relegated to a minor status within the Department of Natural Resources, philosophically as well as in regard to tangible results.

(6) The free-flowing scenic streams study in Indiana should be continued. The General Assembly voted funds for the study, but the program appears to have been put in abeyance.

(7) A major amplification of state park naturalist programs and the extension of such programs to other state lands is needed. These interpretive services should be the cornerstone of the entire state park program, for they and the nature preserves program are basic to environmental education.

(8) Public utilities pose a threat in both air and water pollution. Stack emissions are major sources of air pollution in both particulates and sulphur dioxides. Both fossil fuel plants and nuclear plants, particularly the latter, are the major sources of thermal pollution. These plants also pose some of the most serious "visual pollution" problems.

(9) A growing problem is the disposal of manufacturing wastes such as slag. Most are disposing of acids, etc., in deep well "hypodermic needles," a practice that is seriously to be questioned because it is necessary to make so many unprovable geological assumptions in order to justify the procedure as environmentally safe.

(10) Many smaller industries in Indiana are beginning to install needed pollution remedies; and many of the small to medium cities are installing better waste treatment. Our biggest municipalities, such as Indianapolis, Fort Wayne, Evansville, etc., will be the most difficult to remedy because of the shortage of Clean Water Restoration funds. Pollution has been neglected for so long that the entrenched pollution problems of the older and larger cities can no longer be remedied from local funding sources alone.

(11) The Land and Water Conservation Fund does not have adequate funding. The Administration is asking for only $124,000,000, even though much more has been authorized by Congress. These funds are specified to come from admission and user fees for national recreation areas, sale of surplus federal property, motorboat fuel taxes and special supplementary legislation (revenues from offshore oil). Forty percent of the fund is retained by Federal government for national parks, etc., and sixty percent is returned to states for state parks and recreation, and is also to be shared with counties and cities for local programs. All of these areas are now suffering because the incentive funds for the Land and Water Conservation Fund—provided through the U.S. Bureau of Outdoor Recreation and administered by state natural resources departments—are only minimally available.

CREATIVE EXPRESSION

One of the most important overall objectives in art is for the child to think, feel, and work creatively with visual materials. If he does not do so, the activity in which he is engaged can not truly be called art. Because there is a very real danger that children may strive for accuracy in delineation at the expense of creative expression when themes for art expression based on reality are used, this section has been written in the hope that it will provide some specific helps for the teacher in his efforts to develop creativity within the framework of the ACT in TIME program.

The teacher establishes a climate which encourages creativity when:

1. He exhibits enthusiasm for art and for the immediate work at hand.
2. His attitude toward boys and girls is one of acceptance of their ideas and ways of working. He helps the children search for better ways of working, if advisable, but he does not rebuff their attempts.
3. He encourages the use of reference material for enrichment, and firmly discourages its use as material to be copied. He helps pupils understand that copying is not art.
4. He gives instruction in the use of tools and materials in order that the children may express their ideas more clearly. He does not stress skill for its own sake, nor to the point where techniques taught are beyond the children's level of maturity.
5. His teaching of composition and design principles is for the purpose of helping the children to express ideas more clearly and in a form which is aesthetically pleasing. Again, this instruction is within the ability of the children to grasp.
6. The children realize that the help the teacher gives them is to enable them to solve their problems.

The child who is working creatively:

1. Responds emotionally and with intelligence to the issues of the ACT in TIME program, and wishes to work toward the solving of the vital problems involved.
2. Wishes to express his own ideas, but recognizes the need for and is willing to study to acquire as much knowledge as possible.
3. Approaches the art project as a problem or problems to be solved, and uses his imagination and resourcefulness to that end.
4. Is willing to put forth the necessary effort to achieve his objectives; he exhibits stick-to-itiveness, drive, and persistence.

DESIGN AND COMPOSITION

The use of the five plastic elements, line, color, texture, form and space in the visual arts constitutes what is essentially regarded as design or composition. In any piece of art work, the relationships of the elements remain a principal requisite in good design. A knowledgeable and sensitive use of the elements and their relationships will result in a well-structured design which is pleasing to the eye.

At the primary level, art experiences are more of an emotional than an intellectual process. It is through the development of the child's feeling for color, for space relationships and the rest that his sensitive awareness toward art values grows and, during the intermediate school years, becomes a conscious and intellectual response without losing the emotional impact.

In the primary grades, therefore, the teacher asks such questions of the child as:

"Which part of your picture seems heavy—does the other part seem empty? What can you do about it to make each part interesting?"

"Are there some spaces in your picture that have more interesting shapes than others? Are these more important because of this?"

"When you look at a picture, where do you look first? Would you think that would be a good place for the most important thing in your picture?"

"Which colors seem to catch your attention more than others do? Which would you use for the most important things in your painting?"

"Would you use a color on only one spot in your painting, or will your picture hold together better if the color is repeated in other parts of your picture?"

"Could a repetition of the color help you to see every part of the picture?" (The eye jumps from one red space to the next, around and through the painting, for instance.)

"Could a line weaving through your drawing or painting lead your eye in the same fashion that color spots do?"

As the child becomes older, he gains an understanding of art principles by name. Although art educators sometimes differ as to the exact terms used, the following definitions are basic and beginning with the intermediate level children should be introduced to the terms and encouraged to use the principles consciously in their art work.

DESIGN is Purposeful Order, Arrangement, Composition

The ELEMENTS of Art Structure are the things used to make a design, a painting, or a three-dimensional object.

LINE——thin, wide, light, dark, straight, wavy, diagonal, horizontal, vertical, curving, spiral.

FORM——planes, solids, triangles, pyramids, cones, squares, rectangles, cubes, circles, spheres, cylinders, as well as free flowing forms.

SPACE——Negative and positive. The space occupied by forms is positive—space around the forms is regarded as negative.

TEXTURE—The real or apparent surface treatment. Rough or smooth and all the various treatments which can be given to surfaces.

COLOR——Hue—the quality which enables one to distinguish one color from another (red, blue, etc.).
Value—lightness and darkness of a color.
Intensity—brightness and dullness.

The PRINCIPLES of DESIGN are guides for putting the ELEMENTS together.

REPETITION—harmony gained through repetition of the elements.

BALANCE——formal and informal, symmetrical, assymetrical.

RHYTHM——the flow of orderly motion, beat, progression, growth, movement, direction, sequence, transition, radiation.

PROPORTION—relation of sizes, amounts, quantities, scale.

EMPHASIS——dominance, accent, center of interest (opposed to subordination).

OPPOSITION—variety, contrast.

The successful manipulation of the elements within the framework of principles of design will result in unity.

Design permeates all of art, and it is impossible to guide true art experiences without incul-

cating, consciously or intuitively, a sensitivity to design values.

At the secondary level, students should, of course, incorporate these design principles in their work. Thumb-nail sketches are helpful in formulating space relationships and ideas for pictures and posters. To develop a number of ideas quickly, these small sketches provide a choice, with the best to be enlarged either directly on the paper stock, or on thin paper to be copied or traced on to the permanent material.

The following suggestions may prove helpful in poster composition.

(1) The format, which is usually rectangular and appears in either a vertical or horizontal position represents the maximum paper or show card size.

(2) There should be a small border around the perimeter of the poster stock. No copy should appear therein. Exception to this would be where the design "bleeds" over the edge of the poster stock.

(3) The pictorial content should be over-simplified for clarity. Few objects simply rendered and made large are more suitable for poster design than many delicately rendered objects.

(4) One of the objects should dominate the others by being placed in the foreground and in such relationship to other shapes that it will become the center of interest.

(5) The positioning of objects, one partially over the other, creates the feeling of pictorial depth or space.

(6) Line, color, texture and form should become more intense toward the center of interest.

In the development of posters, the caption or message should be large enough to be easily read at a distance of twenty feet. The lettering, therefore, should be extremely simple in form. Lettering and illustration should be considered a part of the overall design. The caption should be reduced to as few words as possible for clarity.

Composition, as applied to the problems of conservation, both in pictorial and poster form, exists primarily as structure in presenting a visual and/or verbal message. Consequently it is extremely important to simplify and reduce pictorial and verbal matter to their basic concepts.

CONCEPTS, IDEAS AND SUGGESTIONS FOR TITLES

There has been no attempt to separate these by maturity of the pupils. Many concepts or titles might lead to complex delineation by high school students, while elementary pupils would be quite capable of developing the same idea on a simpler level. Elementary children below the fifth grade, however, seldom have any comprehension of time relationships and so are not concerned with the immediacy of the crises.

1. Fish live in clean water.
2. Hard pesticides kill birds and fish.
3. Invite birds to your home.
4. How birds help us.
5. Beneficial bugs—examples: lady bugs, spiders—others are food for birds.
6. Trees and bushes provide berries for birds.
7. What I can do about litter.
8. Don't poison birds' natural foods (by spraying).
9. Windbreaks for wildlife.
10. Homes of woodland creatures.
11. Litter doesn't throw itself away.
12. People spread litter and only people can prevent it.
13. Letter the Johnny Horizon "Outdoor Pledge" p. 14 Litter Prevention bulletin.
14. Creatures who help us to remove debris (crows, buzzards, carnivorous animals) "He is doing his share"
15. Litter harbours rats and snakes.
16. How people are helping to reduce litter.
17. Contrast barrenness of other planets with Earth.
18. Protect natural areas—keep marshes and ponds intact. Protect woodlands.
19. Who pollutes our water?
20. Air pollution:
    Smoky cityscape—"Lovely, but must we breathe it?"
    Smoky cityscape—"You don't have to smoke to get lung cancer."
    Smoking car—"Help me kick the habit"
    People burning leaves—"We pollute the air, too."
    Jet planes
    Crop spraying and dusting
    Smokeless smokestacks—"We've kicked the habit—Why don't you?"
21. Small Animals—"We need a Place to Live"
22. We depend on one another—concept of interdependency of all life.
23. Dead birds or fish—"We just meant to kill the bugs"
24. Rats peering out of cans or litter—"You gave us a nice place to live."
25. Any scene involving litter or pollution—"America the Beautiful?"
26. Clean lake scene—"When will it catch up with Lake Erie?"
27. Wanted: Alive
28. Litter Costs You Money
29. Leaving a Little, Hurts a lot
30. Litter is Expensive
31. Tell It Like It Is
32. Protect It Now
33. Turn The Waters From Brown To Blue
34. The Waters Turn From Blue to Brown
35. Litter Is A Fire Hazard
36. It's Up To You
37. Too Late?
39. Disappearing Act
40. Which Do You Choose?
41. It's Your Choice
42. Open Space—What's That?
43. Get Involved!
44. No. 1 Menace

The following are excerpts from our patriotic and other well-known songs. They make good titles for both illustrations of protecting and reclaiming our natural resources as well as in satire illustrating what can happen and what has happened if we don't protect them:

"Ths Is My Father's World"
"From Sea to Shining Sea"
"Long May Our Land Be Bright"
"Sweet Land of Liberty"
"All Nature Sings and Round Me Rings"
"Purple Mountain Majesties"
"Thine Alabaster Cities Gleam"
"Above the Fruited Plain"
"By the Dawn's Early Light"
"Of Rocks and Trees, of Skies and Seas"
"The Birds Their Carols Raise"
"And Heav'n and Nature Sing"
"His Hand the Wonders Wrought"
"There Grew a Tree"
"The Green Leaves Grew All Around"
"Land of Hope"
"The Trees Bow Down Their Heads"
"And the Skies Are not Cloudy All Day"
"The Green, Green Grass of Home"
"When the Day Is Over"
"Bye Bye Birdie"

ACT in TIME IN THE ELEMENTARY SCHOOL

The elementary art and classroom teachers will find many ways to tie in the ACT in TIME program with the science or nature study units which are already incorporated into the curriculum. Bird and animal subject matter are always popular with children; trees, water and plant life are of real interest to them. These interests can easily be directed into the channels of the need to repair the damage which has been done and to preserve that portion of our natural resources which is still left to us.

The sections on design and creativity reviewed earlier give suggestions which may be helpful to the classroom teacher as to desirable approaches to art and to means of developing an understanding of art structure, while the following should help with ideas and media.

AREAS OF CONCERN FOR ELEMENTARY CHILDREN

Water Pollution

1. By industries
2. By littering
3. By insecticides
4. By oil—boats and seepage
5. By mine drainage
6. By heat from industry and power plants
7. By sewage
8. By excess fertilizer from farms

Air Pollution

1. Smoke—incinerators and industry
2. Smells
3. Air traffic
4. Automobiles

Disfigured land

1. Logging
2. Indiscriminate use of bulldozer
3. Forest fires
4. Littering
5. Building of roads and dams
6. Expanding cities
7. Surface mining
8. Soil erosion

The vanishing wild:

1. Loss of 110 kinds of mammals since the beginning of the Christian era.
2. Extinction of many kinds of birds, reptiles, amphibians, fishes and insects. Extermination is done by direct killing and indirectly by changing their habitat.
3. Drainage of wetlands.
4. Covering the land with asphalt and concrete.
5. Loss of green areas in cities.
6. Loss of timber and eventual erosion.

What to do about it:

1. Provision of effective protection from exploitation.
2. Habitat management.
3. Establishment of parks or reserves to protect the habitat as well as the animals and birds. Establish survival centers from endangered species.
4. Research is needed to find out what species are threatened and then provide long-term management and protection.
5. Educate the present and future generations of the importance of living in harmony with nature and of preserving an environment in which material things can be used as needed while preventing exploitation and ugliness.

MEDIA SUGGESTIONS FOR ELEMENTARY PUPILS

Painting

Transparent water colors

Tempera—With easel and water color brushes

With small pieces of sponge

With shapes of cardboard. Apply tempera to the sides or edges of cardboard pieces and press them against the paper.

Water soluble inks applied to paper with a brayer as well as the edge makes a good free

background of color over which tempera paint, felt pens or India ink may be used to create a composition.

Finger painting—In addition to the usual methods of finger painting, kindergarten and primary children may place the desired shapes cut from manilla paper under the finger painting paper. Using a cardboard squeege, draw the finger paint across the paper firmly which causes the designs to stand out clearly in the paint.

Drawing

Charcoal

Pencil

Felt pens

Ball point pens

Brush and India ink

Chalk— 1. On wet paper
2. On dry paper
3. On colored paper

Crayon—1. Drawings of light and bright colors of crayon on grey, black, brown or other colors of paper using pressure on the crayons so they are brilliant and opaque.

2. Drawings in waxy crayon, using crayon on top of crayon. On smooth paper the crayons can be mixed by rubbing with the fingers or with a tissue over the finger.

3. Drawings in crayon scratch in which light and bright colors are applied waxily all over the paper and then a waxy coat of black crayon is applied on top of it. The drawing is scratched through the black with any sharp-edged object. India ink may be used instead of the black crayon.

4. Drawings in wax resist are made by outlining and texturing and even coloring some areas solidly in crayon. Then water colors or thin tempera are washed over the drawing in the different colors that are needed. The wax crayon shows through the paint and the paint clings to the paper where the crayon is not.

5. Crayon and felt marker drawings or crayon and colored inks.

6. A crayon drawing made in heavy strokes of color can be blurred with a rag dipped in turpentine or a brush and turpentine.

6. Crayon rubbings utilize broken, peeled crayons and cutout shapes under thin paper. The crayons are used on their sides and are rubbed over thin paper which has cutout shapes of manilla paper under it. The shapes can be moved about and rubbings made of them as often as is wished.

   Frottage is a rubbing using delicate dried weeds, evergreen twigs and leaves under the thin paper and then rubbing over them with the side of a black peeled crayon. Water colors may be washed over the black rubbings to add color.

Collage

Torn paper collages with felt markers or paint are very effective. Construction and tonal as well as corrugated cardboard and newspapers can be used.

The use of cloth, yarn, feathers, leather, plastic, and foil makes an interesting collage.

Magazine pictures, words from magazines and newspapers and drawing or painting can be combined to create a composition expressing a theme.

Colored tissue papers, string, cardboard shapes and using a polymer medium for adhesive and plastic covering can be used to create dramatic and colorful posters and scenes.

Rubber cement can be dribbled on paper in a very free design or drawing. It is then painted over with tempera paints. When it is dry, the rubber cement can be peeled off leaving the drawing the color of the paper showing through the paint.

Stitchery

With only a few basic stitches, students can develop a composition in burlap and yarn that can range from very simple to quite complicated depending on their ages. The design can be drawn on the burlap with blackboard chalk before stitching.

Prints

Prints can be made from woodblocks, linoleum prints and cardboard prints and printer's ink. Stenciling in textile paints, with tempera paints, and with chalk and crayon can also be used to create a composition. Prints can be made on newsprint, tonal paper, tissue paper, pages from magazines, on printed newspapers, rice paper

and any other varieties available. Prints can be put on papers the students prepare, such as a painted background or a design done in colored chalk.

Figure Drawing

Contour figure drawings showing a person involved in a desirable practice such as using a litter bag, enjoying a wilderness hike, planting trees or studying the ecology of an area. Or the contour drawing of a figure might be in a scene showing the unsavory scenes of littered beaches alive with rats and flies, or unsightly junkyards, or a beach and swimming area blackened with oil.

Cartoon-Type Drawings

Cartoons using black lines drawings. Crowds of people, many birds, cross section of water with many fish, cross section of earth with all the wildlife under the ground.

Cut Paper Designs

A grouping of square cut paper designs of different motifs of nature or wildlife on different colored paper.

ACT in TIME IN THE SECONDARY SCHOOL

The Senior High art teacher should confer with the teachers of science and social studies in order to determine what information students already have regarding the crises in man's environment. Ideally, the teachers in the three disciplines should work together in guiding students in their exploration of the various ramifications of the problems involved. Secondary students are capable of expressing through art media very serious aspects of the crisis. Many can produce quite original and pertinent titles and slogans which will help to clarify the ideas expressed through their art work. Others may wish to use those which have been suggested in this *Guide*. It is understood, of course, that the suggestions for ideas, titles and media are suggestions only and not intended to rule out other forms of expression. Work can be developed either representationally or in abstract expressionism.

The secondary student should be aware that the message expressing his concern relative these problems must be directed to:

1. General public
2. Local government
3. State and National government
4. Industries
5. Conservation agencies

This concern can be expressed positively by:

1. Beauties of nature
2. Conservation of natural resources
3. Health protection
4. Portraying solutions to the problems
5. Educating present and future generations on the importance of living in harmony with nature and of not exploiting natural resources in an unnecessary degree.

Negative aspects can also be portrayed such as:

1. Litter
2. Pollution of air and water
3. Wildlife loss—extinction
4. Nuclear contamination
5. Destruction of natural areas.

It is suggested that the art teacher present these concepts in such a way that students are encouraged to develop their own specific ideas and titles. The list already given in the guide will be helpful to those students who are not as resourceful as their more imaginative classmates.

AREAS OF CONCERN FOR SENIOR HIGH STUDENTS

Air Pollution

1. Automotive
2. Air traffic
3. Industrial
4. Nuclear
5. Domestic—incinerators, smoke

Water Pollution

1. Industrial-heat, chemicals, litter
2. Municipal
3. Agriculture
4. Sportsmen, picknickers
5. Surface Mining
6. Oil—boats and seepage

Depletion of Wild Life

1. Agricultural causes
2. Sportsmen
3. Disappearance of natural habitat

Forestry

1. Lumbering policies
2. Burning due to carelessness of public (sportsmen and campers—cigarette hazards)
3. Policies of cities in disappearance of public parks and surrounding woodlands.

Soil Erosion

1. Agriculture
2. Land use—suburb developments on denuded hills, etc.
3. Flooding because of cutting trees on hillsides (see National Geographic, October 1969)
4. Surface Mining

Mining

1. Depletion of natural gas, oil, coal, other minerals.

SUGGESTED MEDIA FOR THE SECONDARY LEVEL

Drawing
- Pencil
- Pen and ink
- Felt tip
- Charcoal
- Crayon
- Chalk

Printmaking
- Linoleum
- Woodcut
- Silk screen
- Intaglio
- Lithograph
- Collograph
- Monoprint

Collage

There may be a wide range of materials, but care should be taken to see that they adhere to the background, and do not extend more than ¼" from base.

Poster
- Graphic design

Painting
- Transparent water color
- Opaque water color
- Polymer acrylics
- Oils

Mixed media
(to name only a few possibilities)
- Transparent water color, pen and ink
- Transparent water color, tissue paper
- Opaque water color, ink, rubber cement and sand
- Polymer acrylics, sand, gesso
- Cut paper plus linoleum block printing

Textiles
- Stencil
- Block printing
- Applique
- Stitchery

These are suggestions. Other media are permissible if they conform with the rules set out on the sheet of rules previously sent to the art teachers.

Again, it should be stressed that the ACT in TIME program is not to be restricted to posters; neither are they to be ruled out. The art projects which the teacher and pupils plan together in the ordinary day to day assignments—with content from ACT in TIME—are entirely suitable. By adhering to this policy, the objectives which the teacher has for the art program will not be set aside.

SOURCES FOR FILMS AND FILMSTRIPS FOR CONSERVATION AND NATURAL RESOURCES

Educators Guide To Free Films
29th annual edition 1969
Educators Progress Service
Randolph, Wisconsin 53956

Indiana University 1965 Catalog
and 1968 Supplement
Educational Motion Pictures
Audio-Visual Center
Indiana University
Bloomington, Indiana 47401

National Information Center for
Educational Media
Index to 16mm Educational Films
McGraw-Hill Book Co.
330 West 42nd Street
New York, New York 10036

Educators Guide To Free Filmstrips
21st annual edition 1969
Educators Progress Service
Randolph, Wisconsin 53956

National Information Center
for Educational Media
Index to 35mm Educational Filmstrips
McGraw-Hill Book Co.
330 West 42nd Street
New York, New York 10036

U. S. Government Films For
Public Educational Use
U. S. Department of Health,
Education and Welfare
Superintendent of Documents
U. S. Government Printing Office
Washington, D. C. 20402

CONSERVATION EDUCATION BIBLIOGRAPHY

The following publications will assist you with the "ACT in TIME" project. They are available through the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.

General Conservation

1. *Man . . . An Endangered Species?* Report is excellent for classroom and discussion groups. Has 75 illustrations, 55 in color, 100 p. il.
   Catalog No. 11.95:4 ---------- $1.50
2. *The Third Wave.* A report to the growing millions concerned with preserving the quality of the Nation's air, water, land, minerals, recreation, and fish and wildlife. 128., 175 photos . . . 118 in beautiful color.
   Catalog No. 11.95:3 ---------- $2.00
3. *The Population Challenge.* Provocative report on how expanding population has stretched the Nation's resources, often turning beautiful areas into wastelands. Describes steps necessary to preserve our way of life. 83 p. il.
   Catalog No. 11.95:2 ---------- $1.25
4. *American's Department of Natural Resources.* Up-to-date story about the Department of the Interior, its programs, goals, attainments. Useful reference for students, teachers, conservationists. 1966. 44 p. il.
   Catalog No. 11.72:39/4 ---------- 30¢
5. *Quest for Quality.* Urges a look at our handling of natural resources with a view to tomorrow's demands and needs. 1965. 96 p. il.
   Catalog No. 11.2:03 ---------- $1.00
6. *Surface Mining and Our Environment.* Tells what has been done to restore the land, what has not been done, and what can be done to minimize future damage. Exceptionally valuable for all conservationists, students, teachers. 1967. 124 p. il.
   Catalog No. 11.2:M66/3 ---------- $2.00
7. *Automobile Disposal: A National Problem.* Case studies of factors influencing accumulation of automobile scrap. Metal from junked cars is a major raw material resource. 1967. 569 p. il.
   Catalog No. 1.28.2:Au8 ---------- $4.50

Water

1. *Has the United States Enough Water?* Estimates total natural water supply and amount available in 19 major drainage basins; projects current water demand to 2000 A.D.; suggests possible courses of action for optional use. Includes 3 large water-supply maps. 1965. 27 p. il.
   Catalog No. 119.13:1797 ---------- $2.25

Parks-Recreation

1. *From Sea To Shining Sea.* Report by President's Council on Recreation and National Beauty. Lists comprehensive goals and programs to alleviate conditions harmful to the environment. 304 p. il.
   Catalog No. PR 36.8:R24/SE1 ---------- $2.50
2. *Wilderness.* Describes the wild and primitive lands of the wilderness areas maintained by the National Forest Service and the recreational opportunities enjoyed in these areas. Includes a map showing the 10 wilderness type areas in the United States. Rev. 1967 [16] p. il.
   A 1.68:459/3 ---------- 20¢
3. *National Forest Wilderness and Primitive Areas.* Gives information on the origin, development, and management of wilderness and primitive areas. Also discusses the wilderness Act and its provisions and the nature of wildnerness, where it is located, and how it may be used and enjoyed. Includes a map showing 88 units in 14 States that are managed by the Forest Service. Rev. 1968. [12] p. il.
   A 13.2:W64/968 ---------- 15¢

Wildlife

1. *Survival or Surrender of Endangered Wildlife.* Describes, in photographs and text, the several species of American wildlife faced with extinction. 1965. 16 p. il.
   Catalog No. 1.49.4:223 ---------- 15¢

The following magazines contain information which will provide young people with sound ideas and answers to many environmental problems:

1. *Audubon,* 1130 Fifth Avenue, New York, New York 10028.
2. *National Wildlife,* 1412 Sixteenth Street, N.W., Washington, D. C. 20036.

3. *Ranger Rick*, National Wildlife Federation, 1412 Sixteenth Street, N.W., Washington, D. C. 20036.
4. *Outdoor Indiana*, Division of Information and Education, Room 612, Department of Natural Resources, Indianapolis, Indiana 46204.
5. *Time*.

The following conservation periodicals are free and provide excellent information on all problem areas of the environment:

1. *Conservation Vistas*, North Central Region, Forest Service, U. S. Department of Agriculture, Milwaukee, Wisconsin 53203.
2. *Conservation Foundation Letter:* A Report on Environmental Issues, The Conservation Foundation, 1250 Connecticut Avenue, Washington, D. C. 10036.
3. *Conservation News*, National Wildlife Federation, 1412 Sixteenth Street, N.W., Washington, D. C. 10036.
4. *Conservation Catalyst*, The Belle W. Baruch Foundation, 274 Madison Avenue, New York, New York 10016.
5. *Conservation Education News*, Michigan Department of Conservation, Lansing, Michigan 48926.

There are a number of conservation agencies in Indiana having free materials. The following agencies will provide resource people and resource matrials upon request:

Soils

1. Contact your local Soil Conservation Service or write to: Soil Conservation Service, 311 West Washington Street, Indianapolis, Indiana 46204.
2. Division of Information and Education: Room 612, Department of Natural Resources, Indianapolis, Indiana 46204.
3. Contact your local county extension service or write to: Cooperative Extension Service, AES Building, Purdue University, Lafayette, Indiana 47907.

Wildlife

1. Write to: Division of Fish and Game, Room 607, State Office Building, Department of Natural Resources, Indianapolis, Indiana 46204.
2. Write to: Cooperative Extension Service AES Building, Purdue University, Lafayette, Indiana 47907.

Rocks and Minerals

1. Department of Natural Resources.
2. Cooperative Extension Service, Purdue University.
3. Soil Conservation Service.

Water

1. Department of Natural Resource, Division of Water.
2. Purdue University.
3. Soil Conservation Service.
4. Mr. John Boruff: Health Education Consultant, State Board of Health, 1300 West Michigan Street, Indianapolis, Indiana 46204.

Forests

1. Mr. Claude Ferguson: Supervisor, Hoosier National Forest, U. S. Forest Service, 1615 "J" Street, Bedford, Indiana 47421.
2. Department of Natural Resources, Division of Forestry.
3. Cooperative Extension Service, Purdue University.

Air Pollution

1. Department of Natural Resources, Division of Information and Education.
2. Mr. John Boruff, State Board of Health.

Solid Wastes and Sanitation

1. Mr. John Boruff, State Board of Health.
2. Purdue University, Department of Civil Engineering.

New materials:

New materials:

1. *Our Polluted World.* This book helps students understand the scientific principles of air and water pollution, then shows how this knowledge can be applied to solve our critical pollution problems. Chapters include air pollution from the beginning, the horror of London's fatal fog, air pollution control, oil pollution of the seas, pollution by radioactivity. 48 pages. Grades 7-12. Price 20 cents. American Education Publications, Education Center, Columbus, Ohio 43216.
2. *Conservation Education.* Provides teachers and students with case studies of natural resource problems. Helps to provide incentive for class discussion. Grades 7-12. Price 20 cents. American Education Publications, Education Center, Columbus, Ohio 43216.